

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A voltage detecting apparatus for a combination battery comprising:

a multiplexer type flying capacitor voltage detecting circuit having an input multiplexer and an output side sampling switch, whose operation timing is controlled in response to an entered switching control signal for time sequentially executing voltage read-in processing and voltage read-out processing to detect the voltage of a plurality of battery modules of a combination battery in a time sequential fashion;

a synchronous control type A/D converter whose operation timing is controlled in response to an entered activation signal for sample holding and A/D converting an analog output voltage of said flying capacitor voltage detecting circuit, and holding a digital voltage signal as a resulting output until a succeeding digital voltage signal is obtained; and

a battery controller whose operation timing is controlled in response to an entered transfer command signal for reading said digital voltage signal produced from said A/D converter and storing the readout digital voltage signal into a data storage area assigned to each of said battery modules,

wherein said battery controller comprises a timing table on which generation timings of said switching control signal, said activation signal, and said transfer command signal are all determined on a common time axis, and

timing control for said flying capacitor voltage detecting circuit, said A/D converter, and said battery controller is carried out by outputting said switching control signal, said activation signal, and said transfer command signal to said flying capacitor

voltage detecting circuit, said A/D converter, and said battery controller at the timing regulated in said timing table and according to an order memorized in said timing table.

2. (Original) The voltage detecting apparatus for a combination battery in accordance with claim 1, wherein said battery controller gives first priority to the output of said switching control signal supplied to said flying capacitor voltage detecting circuit in a case that said timing table regulates signal generation timings in such a manner that the generation timing of said switching control signal equals to or overlaps with the generation timing of said activation signal or said transfer command signal.

3. (Original) The voltage detecting apparatus for a combination battery in accordance with claim 1, wherein

said timing table sets the timing of said activation signal in such a manner that a voltage read-in timing of said A/D converter does not involve a switching timing of said flying capacitor voltage detecting circuit and a switching timing for data storage of said battery controller.

4. (Original) The voltage detecting apparatus for a combination battery in accordance with claim 1, wherein

said timing table includes a first small table for designating the timing of said switching control signal and a second small table for designating the timing of said activation signal and said transfer command signal, being respectively regulated on the common time axis, and

said battery controller refers to said first small table at time intervals shorter than those of said second small table.

5. (Original) A voltage detecting apparatus for a combination battery, comprising

a flying capacitor voltage detecting circuit having an input multiplexer and an output side sampling switch and executing voltage read-in processing and voltage read-out processing in a time sequential fashion to detect the voltage of a plurality of battery modules of a combination battery;

an A/D converter for A/D converting an analog output voltage of said flying capacitor voltage detecting circuit into a digital voltage signal; and

a battery controller for reading said digital voltage signal produced from said A/D converter and storing the readout digital voltage signal into a data storage area assigned to each of said battery modules,

wherein said battery controller comprises a read-out order memory table for regulating voltage detection order of respective battery modules,

said battery controller writes identification numbers of battery modules into said read-out order memory table in order of voltage largeness of respective modules detected previously, and

said battery controller controls said input multiplexer of said flying capacitor voltage detecting circuit in such a manner that, in the next voltage read-out processing of respective modules, the module voltages are successively read out in accordance with the order memorized in said read-out order memory table.

6. (New) The voltage detecting apparatus in accordance with claim 1, wherein the battery controller comprises a timing control section for producing the switching control signal indicating a switching pattern corresponding to a switch operation event when there is the switch operation event in the timing table, outputting the switching control signal to the multiplexer type flying capacitor voltage detecting circuit to control the operation timing of the output side sampling switch and the input multiplexer, producing the activation signal corresponding an A/D activation event when there is the A/D activation event in the timing

table, outputting the activation signal to the A/D converter to control the operation timing of the A/D converter, producing the transfer command signal corresponding a memory storage event when there is the memory storage event in the timing table, and outputting the transfer command signal to the battery controller to control the operation timing of the battery controller.